

REMARKS

In response to the Patent Office Action of September 23, 1998, the Applicants respectfully request reconsideration. To further the prosecution of this application, amendments have been made in the title of the invention and the claims. The claims as now presented are believed to be in allowable condition.

Claims 1-20 were previously pending in this application. Of those claims, claims 1-16 were withdrawn by the Examiner from consideration, as being drawn to a non-elected invention. Claims 1-16 have been canceled. Claims 17-20 remain pending and under consideration.

Election

The Examiner has restricted examination under 35 U.S.C. §121 to either Group I, including claims 1-16, drawn to a cable, or Group II, claims 17-20, drawn to a method of producing a cable. The Applicants hereby affirm the telephone election made by Applicants' representative, Mr. Gary S. Engelson, on April 9, 1998, without traverse, to prosecute the invention of Group II, including claims 17-20.

Rejections Under 35 U.S.C. §103

Claims 17-20 have been rejected under 35 U.S.C. §103(a) as unpatentable over Gaeris et al., U.S. Patent No. 5, 789,711 or Beaver, U.S. Patent No. 1,700,606, or Davis, U.S. Patent No. 1,132,452, or Eilhardt et al., U.S. Patent No. 3,603,715, taken in view of Bryan et al., U.S. Patent No. 2,882,676, Staschewski, U.S. Patent No. 3,559,390 and Davis et al., U.S. Patent No. 3,340,112. This rejection is respectfully traversed.

As indicated by the Examiner, each primary reference shows a transmission cable

including a shaped core with transmission elements aligned to spaces defined by the core. However, as further indicated by the Examiner, no reference defines how such a structure is made, except very broadly, for example as given in page 1, lines 102-106 of Beaver.

The Examiner goes on to state that it is well known to form transmission cables using conventional cable stranding equipment. Several references are then cited, which disclose such conventional cable stranding equipment. However, no combination of references teaches the steps of "passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core" [emphasis added] and of "bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core."

The references are now examined for what they teach both individually and in combination.

The primary references each teach a cable structure. Gaeris et al. teaches a high speed data cable having a "+"-shaped insulating core. As for a method of making the cable, Gaeris et al. simply state that the elements are "cabled" and the binder is "wrapped" about the cable elements. Beaver teaches a high tension, i.e., high voltage, power cable. With respect to the method of making, Beaver describes the elements of the cable as being "laid up" together with various space filling components. However, no further detail is disclosed. Davis also discloses a high tension cable which is produced by twisting the elements together and during or after the twisting, filling the interstices with a waterproofing material. Finally, Eilhardt teaches a cryogenic power cable. One

example disclosed by Eilhardt is

A particular carrier string may originally have a regular cylindrical contour with star-shaped cross section so that straight ribs extend in axial direction with alternating ribs and grooves in between ribs distributed around the circumference of that carrier string. By operation of a suitable tool this carrier string is twisted so that the ribs obtain somewhat helical extension. The thus prepared carrier string is run into the stranding machine together with superconductor string elements which become positioned in the helical grooves.

In each case, the references fail to teach or suggest the steps of "passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core" and of "bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core."

To the foregoing references which disclose various kinds of cables having insulating cores, the Examiner has added a number of secondary references. The secondary references are provided to teach methods of making cables which would have been known to one of ordinary skill in the art at the time the present invention was made.

Bryan teaches a cable stranding apparatus which equalizes the lengths of individual wires in a twisted cable. However, Bryan does not offer any teaching with respect to aligning individual wires with the surface features of a cable core. Bryan teaches equalizing movement over a length of cable of particular strands to and from the cable interior and exterior regions. Staschewski discloses an apparatus for bonding twisted plastic insulated conductors. The apparatus of Staschewski does include a first die through which the insulated conductors pass, prior to being heated by head 17, so as

to make pasty the insulation surrounding the wires. The wires are then bunched, to adhere the pasty insulation of the wires. However, the apparatus of Staschewski does not work with a core having surface features defined thereon, such as recited in the claim. As such, Staschewski lacks the features for aligning the core with the conductors, i.e., the second die of the claim. Moreover, such a structure would interfere with heating head 17, rendering Staschewski inoperative. Finally, Davis et al. does indeed disclose multiple die plates for building successively larger cable cores. However, there are no features discussed for aligning the cable transmission elements with surface feature defined on an insulating core or any other structure. That is, although Davis et al. teach multiple dies, they fail to teach or suggest the steps of "passing a plurality of transmission media and a core through a first die which aligns the plurality of transmission media with surface features of the core" and of "bunching the aligned plurality of transmission media and core using a second die which forces each of the plurality of transmission media into contact with the surface features of the core."

Even when viewed in combination, these references fail to teach the invention as recited by the claims. The Examiner's primary references can be read to teach the desirability of aligning cable transmission elements with surface features of a shaped core. However, while the primary references do teach the desirability of employing a manufacturing method which aligns the cable transmission elements with an insulating cable core, none teaches or suggests any such method. The secondary references only teach conventional cabling methods, used in connection with cables not having the insulating core with surface features defined thereon, as recited in the claim. Therefore, the secondary references add nothing to the teachings of the primary references with

respect to the noted claim language.

The Examiner cannot supply the missing teaching without justification. The problem of aligning the surface features of the core with the twisted pairs of the claimed invention is not discussed in any of the Examiner's reference. There is no recognition of the problem which the present inventors have recognized and solved. Therefore, there is no motivation to modify any of the references or combination thereof to form the present invention.

Conclusion and Request for Reconsideration

Reconsideration of claims 17-20 is respectfully requested.

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. Should further questions arise concerning this application, the Examiner is invited to call Applicants' representative at the number listed below.

If an extension of time is necessitated by the filing of this paper or any future paper filed in this case, such an extension of time through the filing date of this paper is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees, which may be required under 37 C.F.R. §§1.16 or 1.17, or credit any overpayment to Deposit Account No. 23-2825.

Respectfully Submitted,

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